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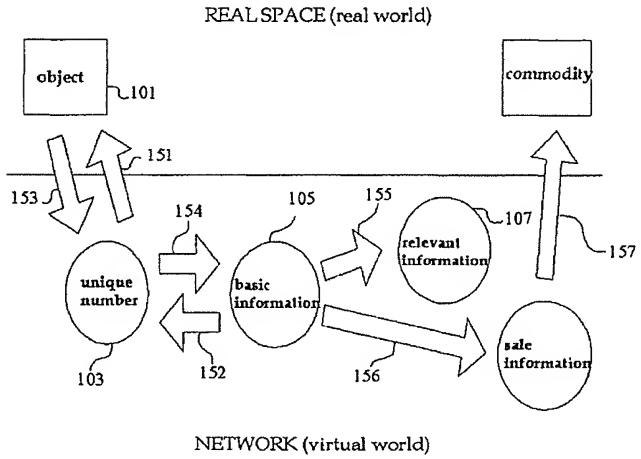
(54) **Title:** METHOD AND SYSTEM FOR PROVIDING INFORMATION ASSOCIATED WITH AN OBJECT HAVING AN IDENTIFICATION SYMBOL WHICH IS PHYSICALLY READABLE, AND FOR GENERATING VIRTUAL OBJECT WITH REFERENCE TO AN IDENTIFICATION SYMBOL WHICH IS PHYSICALLY READABLE AND PRINTED ON A REAL OBJECT



(57) **Abstract:** A method for searching through a network, the related information associated with an object which has a readable identification symbol and providing the information to a user. The method comprises the steps of associating the identification symbol of the object with a basic information of the object, searching through the network the related information which is related with the object based on basic information of the object, associating the searched related information with the basic information of the object, reading the identification symbol by physically acting on the object using a user terminal, searching the basic information with reference with the read identification symbol, and providing the user with the related information associated with the basic information with reference with the basic information.

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【DESCRIPTION】

【TITLE OF THE INVENTION】

Method and System for Providing Information Associated with an Object Having an Identification Symbol Which Is Physically Readable, and for Generating Virtual Object with Reference to an Identification Symbol Which Is Physically Readable and Printed on an Real Object

【TECHNICAL FILED】

The present invention relates to reading and processing a symbol that is marked on an object. More specifically, the present invention is directed to a method and an apparatus that read the symbol that is marked on the object and that obtain additional information and virtual object therefrom.

【BACKGROUND OF THE INVENTION】

In order to search information about various objects that exist in the real world, in particular, commodity, a person uses a book that is a representative information source, or uses the Internet that recently emerges as the broadest information source.

For example, a consumer searches relevant information by using books or the Internet, in order to obtain the information about a commodity prior to purchasing the commodity. At this time, the consumer uses books and the Internet, with reference to information that identifies the commodity, for example, the commodity name or commodity number that is provided by a manufacturing company. The consumer writes down the commodity identification information, that is, the

commodity name or the commodity number, and thereafter, goes to a library to find out relevant books or goes to a terminal accessible to the Internet to search relevant information with reference to the commodity identification information that was written down previously.

Further, in the event that a person wishes to obtain more information relating to an article or a broadcast program which the person sees in a newspaper or broadcast, the person should written down the title of the article or the broadcast program or keywords thereof to search the information through the Internet or should browse books in a library as the above example.

Recently, in the field of online game or chatting service using the Internet, the service wherein a virtual object is created by imitating a real object and wherein the character representing the virtual object is distributed online, is activated. As examples of distribution of virtual object that exists in the virtual world, the service of selling character garment that is provided by "Sayclub (http://www.sayclub.com)," the Internet chatting service of Neowiz Corporation, and the service of distributing character that is provided by Ncsoft Corporation Ltd. can be referred.

In Sayclub, a character-avatar expressing a chatting member is created and the character-avatar represents the member in the virtual space. Further, Sayclub makes profit by selling a garment and an accessory for the character-avatar. The garment is not a real garment, but a virtual garment that exists only in the service of Sayclub. The garment can be obtained in

the virtual space after a user pays cash to the service provider in the real space. It is also possible that the purchaser re-sells the garment to the other member.

In "Lineage," online game of Ncsoft Corporation Ltd., the item such as an armor that a character can wear in the game is obtained by virtual activity in the virtual space of the game, in principle. However, in reality, a user frequently buys popular items from other users by paying cash although the service provider keeps back the user from doing that. As can be seen from the above, it is considered that the interest and demand for distributing virtual objects get to a considerable level.

【SUMMARY OF THE INVENTION】

The objective of the present invention is to search, in virtual world, information of objects that exist in the real world through networks and provide the information with a user.

Another objective of the present invention is to provide a method wherein information about a commodity that exists in the real world is searched from virtual world and, thereafter, is provided to a user and wherein the user purchases the commodity based on the information in the best condition.

Another objective of the present invention is to provide a method to create a virtual object corresponding to a commodity in the real world by using information about the commodity and to distribute the virtual object.

In order to accomplish the objective, a method for searching relevant information relating to an object including physically readable

identification symbol through network and providing the relevant information, according to the present invention, comprises a step of associating the identification symbol of the object with basic information of the object; a step of searching the relevant information relating to the object based on the basic information; a step of associating the searched relevant information of the object with the basic information of the object; a step of reading the identification symbol by physically acting to the object with user terminal device; a step of searching the basic information of the object with reference to the read identification symbol; and a step of providing, to the user, the relevant information that is associated with the basic information with reference to the basic information of the object.

A system for searching relevant information relating to an object including physically readable identification symbol through network and providing the relevant information to a user, according to the present invention, comprises a host computer that comprises a first recording area where the identification symbol, basic information and associative relationship between the identification symbol of the object and the basic information of the object are recorded, searching means for searching relevant information relating to the object based on the basic information of the object through network, a second recording area where the searched relevant information of the object and the associative relationship between the basic information of the object and the relevant information of the object are recorded; and a user terminal device that comprises reading means for reading the identification symbol by physically acting to the

object, temporary storing means for temporarily storing the read identification symbol, transmitting means for the temporarily stored identification symbol to the host computer through network, receiving means for receiving the relevant information that is transmitted from the host computer and means for providing the received relevant information by the receiving means to the user. The host computer further comprises receiving means for receiving the identification symbol transmitted from the user terminal device and transmitting means for transmitting the relevant information that is recorded in the second recording area to the user terminal device. Further, the host computer extracts basic information of the object with reference to the identification symbol received by the receiving means, searches through the network the relevant information that is associated with the basic information with reference to the extracted basic information of the object and records it in the second recording area.

According to another aspect of the present invention, a method for creating virtual object corresponding to an object including physically readable identification symbol in virtual space that is defined by user terminal device, server and network to which the terminal device and the server are accessible, is provided. The method comprises a step of associating the identification symbol of the object with basic information of the object; a step of reading the identification symbol by physically acting to the object through the user terminal device; a step of searching the basic information of the object with reference to the read identification symbol;

and a step of creating the virtual object corresponding to the object with reference to the basic information of the object.

【BRIEF DESCRIPTION OF THE DRAWINGS】

Fig. 1 is a block diagram that shows a process of an embodiment of the present invention.

Fig. 2 is a schematic drawing that shows the structure of database in a server according to an embodiment of the present invention.

Fig. 3 is a flowchart of an example of process that provides relevant information to a user according to the present invention.

Fig. 4 is a flowchart of an example of process by which the user who received the relevant information requests particular service according to the present invention.

Fig. 5 is a flowchart of an example of process by which the user who received the relevant information modifies and edits a part of the relevant information according to the present invention.

Fig. 6 is a block diagram that shows a process of an embodiment of the present invention.

Fig. 7 is a block diagram that shows communication environment for the present invention.

< Description of Important Reference Numerals of the Drawings>

101: objects in the real world

103: object identification information

105: basic information

107: relevant information accessible through networks

【BEST MODE FOR CARRYING OUT THE INVENTION】

An embodiment of the method wherein relevant information that relates to an object in the real world is searched and is provided to a user, according to the present invention, will be described.

1. Definition of System, Environment and Terms for the Present Invention

Fig. 7 is a block diagram that shows the minimum environment for an embodiment of the present invention. Figs. 1 and 6 show block diagrams that show the processes of the embodiments of the present invention. The method that is illustrated in Fig. 1 relates to the process wherein information about object (101) that exists in the real world is searched from virtual world through networks and is provided to the user. The method that is illustrated in Fig. 6 relates to the process wherein information about object (101) that exists in the real world is transmitted to the virtual world through networks and wherein a virtual object (607) corresponding to the object is created in the virtual world.

As shown in Fig. 7, the environment for the present invention comprises real object (701), identification symbol (703) that is marked in real object (701), reader (705) for reading identification symbol (703), terminal (707) for receiving the identification symbol that is read by the reader and for sending it, server (709) that receives through network the identification symbol that the terminal (707) sent and that searches basic information relating thereto, and thereafter searches relevant information from various computers connected to the network, based on the basic

information, user database (715) that records information about the users. According to another embodiment of the present information, the environment further comprises virtual object managing server (711) for creating a virtual object based on basic information and for managing it, and virtual object database (713) for recording information about the created virtual object.

The network connects a user with the server and may include voice telephone network, Audio Response System ("ARS"), the wired/wireless Internet and so forth. It should be noted that the spirit of the present invention is not limitedly interpreted according to the kind of the network. The network should be interpreted to include every communication means in the broadest scope.

For carrying out the method that is shown in Fig. 1, in connection with object (101) in the real world, object identification information (103), basic information (105), and relevant information that is accessible through networks should be defined. Further, for carrying out the method that is shown in Fig. 6, virtual object (607) in the virtual world, which corresponds to object (101) in the real world, should be defined.

Identification information (103) is a symbol that is used for identifying an object. Further, identification information (103) is information that is marked in object (101) in the real world.

Basic information (105) is referred to as information that includes attributes of the object. It is preferred that basic information (105) is recorded in the server on the networks. Alternatively, basic information

(105) can be recorded in a terminal device. The attributes of object (101) where identification information (103) is marked can be searched with reference to the associated relationship between identification information (103) and basic information (105).

Relevant information (107) is information accessible through networks and is referred to as various information on the networks, which can be referenced based on basic information (105). Relevant information (107) can exist in server on networks or can be other source on the networks.

Virtual object (607) is referred to as representation of real object (101), which exists in the virtual world. In order to show virtual object (607), character that can be expressed by the computer, can be used. Virtual object (607) and real object (101) can be associated to each other by basic information (105) about real object (101). Further, it is possible to more specifically express virtual object (607) by relevant information (105) about real object (101). In this specification, the "virtual world" is virtual space that is defined by network, server, user terminal and so forth, and is referred to as space where said virtual object (607) is created and is managed and that is accessible through said networks.

According to the method that is shown in Fig. 1, identification symbol (103) for identifying an object is previously marked as physically readable form in object (101) that exists in the real world. Alternatively, as shown in Fig. 1, identification symbol (103) for identifying an object is marked by a separate process (151) in object (101) that exits in the real

world.

Subsequently, basic information (105) about object (101) of the real world is associated with identification symbol (103) that is marked in object (101). (152)

Upon user's operating, the user terminal device reads identification symbol (101) by physically acting to object (101) of the real world. (153)

Subsequently, read identification symbol (103) is referred to and basic information (105) of object (101) is searched (154). As described in the above, in the event that basic information (105) is recorded in the server, the user terminal device sends read identification symbol (103) to the server through the network and the server searches basic information (105) that is associated with identification symbol (103). On the other hand, in the event that basic information (105) is recorded in the terminal device, the user terminal device searches basic information (105).

Relevant information (107) that relates to the object is searched through networks, based on the searched basic information. Subsequently, the searched relevant information of the object is associated with basic information (105) of the object.

Relevant information (107) that is associated with basic information (105) is provided to the user by referring to searched basic information (105). (156)

The user can use the provided relevant information (107) as reference for doing various behaviors in the real world (157).

Additionally, the user can renew basic information (105) with

reference to the provided relevant information. In the event that basic information (105) is recorded in the server on the network, the user sends renewal command to the server by use of the user terminal device. In the event that basic information (105) is recorded in the user terminal device, the user can renew basic information (105) by operating the device.

Further, the user can wish to select a part of the provided relevant information (107) and to record the selected information in a separate recording area. The selected information can be recorded in recording medium of the server or can be recorded in recording medium of the user terminal device.

Preferably, while supervising, through the network, the process wherein the user reads identification symbol (103) of object (101) by using the terminal device, the server measures the user's operation and statistics of use of server.

In the below, each step of the embodiment of the process that is shown in Figs. 1 and 6 is more specifically explained.

2. Method of Obtaining Relevant information of Object Through Identification Symbol of the Object

(1) Process of Assigning and Marking Identification Symbol to Object

First, according to a predetermined rule, symbol that can identify each object is assigned to the object. In order to assign identification symbol, a new identification symbol system can be prepared. Alternatively, the conventional barcode system such as UPC/EAN barcode

that is attached in a commodity can be used as it is. If the conventional barcode system is used as it is, the barcode that is printed on a commodity or the case of the commodity is used as identification symbol of the commodity.

According to another embodiment of the present invention, it is possible to assign user identification symbol to each user. In this embodiment, an identification symbol including the user identification symbol is assigned to the object that the user requests to assign the symbol. Therefore, the identification symbol consists of user identification symbol part and object identification symbol part. In this embodiment, it is possible not only to discriminate user relating to a commodity, for example, owner of the commodity or provider of the commodity, but also to discriminate the commodity, through the identification symbol.

After an identification symbol is assigned to each object, the identification symbol is marked as physically readable form in the object. The marking can be accomplished by the method wherein one-dimensional barcode or two-dimensional code is printed on the object or the case of the object.

According to another embodiment of the present invention, attributes of an object such as outer configuration, color, taste, fragrance and odor can be used as identification symbol. In this embodiment, the processes of assigning identification symbol of the object and of marking the identification symbol to the object are omitted.

According to an embodiment of the present invention, it is possible

to mark the identification symbol so that a user cannot recognize an identification symbol of an object without purchasing the object. In this embodiment, it is preferred to mark the symbol so that the user can read the identification symbol only after the user opens the case or after the user destroys the cover or case covering the identification symbol of the object. Further, it is preferred that the identification symbol is made by complex combinations so that it cannot be easily assumed by simple combinations. Further, each commodity is provided with identification symbols that differ from one another whenever the commodity is cased or the identification symbol is attached. The marked identification symbol cannot be recognized until the case of the commodity, which protects the symbol, is irreversibly removed by physical, electrical, chemical, or optical method and so forth. Further, it is preferred that the user can easily confirm whether the cover covering the identification symbol is removed. For example, a paper is placed over the identification symbol or special wrap such as an instant lottery ticket is covered over the symbol.

The list of the identification symbol is managed by database of a server of an agency that issues the identification symbol. Further, the server records whether a user sent the identification symbol to the server through network with respect to each identification symbol. In addition, the server can store additional information about each identification symbol. The remaining additional information will be explained in the below.

(2) Process of Associating Identification Symbol of an Object with

Basic Information about the Object

Basic information (105) about an object is information (105) including the attributes of the object. By the associative relationship between identification information (103) and basic information (105), the basic attributes of object (101) where the identification information (105) is marked can be searched. Basic information (105) acts as a role of reference or keyword for search of relevant information of the object by various sources on network. The basic information can be Uniform Resource Locator ("URL") indicating the site on the Internet, which relates to the object.

It is preferred that basic information (105) is recorded in the server on the network. That is, together with basic information (105) relating to various objects, the associative relationship between basic information (105) and the identification information that is marked on the object is recorded in the server on the network. The server establishes separate database and records the associative relationship between the basic information and the identification information, in the established database.

Fig. 2 shows schematic structure of the database within the server according to an embodiment of the present invention. The database of Fig. 2 has identification information and basic information of commodities such as CD, DVD, books and so forth and the associative relationship between the identification information and the basic information that are recorded therein. In Fig. 2, barcode in accordance with EAN system is used as identification symbol.

In Fig. 2, "FIELD" item (201) shows data item in the database. "CD" item (202), "DVD" item (203), and "BOOK" item (204) show data of CD, DVD and Book, respectively.

In "GOD_CD" item (212), barcode that can have a length of up to a maximum of 20 digits is recorded in 13 digits. For example, barcodes of 13 digits are recorded with respect to the commodities that are recorded in the database of the server, that is, CD, DVD and book. In "GOD_GB" item (213), flag that indicates whether the barcode is according to the standard barcode system is recorded in one letter. In the example of Fig. 2, since the barcodes of CD, DVD, and book are in accordance with EAN barcode system, the flag is recorded as "A." In "GOD_NM1" item (214), commodity name that can have a length of up to a maximum of 100 letters is recorded. In "GOD_NM2 item (215), the second commodity name that can have a length of up to a maximum of 100 letters, is recorded. For example, if the commodity is a CD, the album name is recorded in "GOD_NM1" item (214) and the artist's name is recorded in "GOD_NM2" item (215). In "DIS_CD4" item (216), special code that identifies the category of a commodity and that has a length of up to a maximum of 6 letters is recorded. In "COUNTRY_CD" item (217), the information about the country where each commodity was manufactured is recorded. In "VENDOE_CD" item (219), the code of a manufacturing company of each commodity that has a length of up to a maximum of eight letters is recorded. In "VENDOR_URL" item (219), the URL of the manufacturing company that has a length of up to a maximum of eight letters is recorded.

In "DIS_NM" item (221), commodity category information that has a length of up to a maximum of 50 letters is recorded.

According to another embodiment of the present invention, basic information (105) can be recorded in a terminal device. In this embodiment, it is preferred that the associative relationship between basic information (105) and identification information is also recorded in the terminal device. The associative relationship between the basic information and the identification information is recorded in a recording medium of the terminal device.

According to another embodiment of the present invention, if an identification symbol includes user identification symbol, it is preferred that the basic information about the user is recorded in the server. In this embodiment, it is necessary that the associative relationship between the user identification symbol and the basic information about the user is recorded. The basic information of the user is inputted by the user directly and is stored in a database when the user is assigned with user identification symbol.

In an embodiment of the present invention, if the identification symbol is a barcode that is printed on a commodity, associating the identification symbol with basic information is accomplished by link to the database of an agency that issues the barcode. Alternatively, it is also possible that a program, for example, an agent, is executed to automatically renew link to the basic information relating to the barcode. If the identification symbol is a barcode, the basic information can include

attribute information of the commodity such as commodity name, manufacturing company, manufacturing date, shape, taste, color and so forth.

(3) Process of Reading Identification Symbol by Physically Acting to Object

A user terminal device reads an identification symbol that is marked in an object by physically acting to the object. If the identification symbol is barcode that has been used conventionally, the user terminal device has a barcode scanner mounted thereon that executes reading function.

In another embodiment of the present invention, identification symbol is marked on an object or a case of the object so that a user can recognize it. In this embodiment, the user recognizes the identification symbol and inputs it in its terminal device. Subsequently, the terminal device deciphers the value the user inputted and deduces the identification symbol of the object. For example, if the identification symbol is a barcode, the user can input the number that is printed along with the barcode on the object, to the terminal device. According to an embodiment of the present invention, the terminal device is a cellular phone. In this embodiment, the user recognizes an identification symbol and inputs the number corresponding to the identification symbol, to the cellular phone. If the terminal device is a cellular phone, it is also possible that the cellular phone has a barcode reader attached thereto and that the barcode is read with the cellular phone.

According to an embodiment of the present invention, as shown in Fig. 7, the user terminal device can include barcode reader (705) for reading a barcode and control device (707) for processing the read barcode. Barcode reader (705) may be a device for reading one-dimensional barcode or two-dimensional barcode. It is preferred that barcode reader (705) has a function of reading barcode and temporarily storing the read barcode. Control device (707) may be a general-purpose computer.

Further, barcode reader (705) reads barcode, thereafter temporarily stores the read barcode in the memory of barcode reader (705). In this embodiment, the barcode inputted to barcode reader (705) can be transmitted to a personal computer by connecting the reader with the computer through serial transmission, Universal Serial Bus ("USB"), infrared transmission, Bluetooth and so forth.

According to an embodiment of the present invention, the barcode that is stored in memory of barcode reader (705) is transmitted to control device (707) wiredly or wirelessly. In the event that barcode reader (705) and control device (707) send and receive signal to each other wiredly, the barcode can be transmitted through ports such as serial port, USB, parallel port and so forth. In the event that barcode reader (705) and control device (707) send and receive signal to each other wirelessly, the barcode can be transmitted through local area wireless communication such as infrared transmission, Bluetooth and so forth.

(4) Process of Searching Basic Information of Object by Referring to Identification Symbol

First, a user terminal device transmits the read identification symbol to the server on the network. Subsequently, the server references its database to search the basic information relating to the transmitted identification symbol.

According to another embodiment of the present invention, basic information of various commodities is recorded in the recording medium of the terminal device. In this embodiment, the search of the basic information is conducted by the terminal device.

According to another embodiment of the present invention, the read identification symbol is transmitted to the server on the network and, thereafter, the server executes a program such as an agent to extract the basic information that is recorded in the other server on the network.

(5) Process of Searching Relevant information That Is Distributed in Many Sources on Network Based on Basic Information and Associating Them

The server modifies the basic information so that the information can be used for searching relevant information that is distributed in many sources on the network. That is, the server extracts searching word or keyword from the basic information, which can be used for searching the relevant information. The relevant information is information that relates to an object and that exists in sources on the network. The relevant information includes retail price, use opinion of the object, information on the seller and so forth.

The server references the searching word or the keyword that is

determined from the basic information to search relevant information relating to the object from many sources on the network.

According to another embodiment of the present invention, the server transmits the searching word or the keyword to the other server on the network by executing a program such as an agent, and, thereafter, the other server searches the relevant information with reference to the searching word or the keyword. It is preferred that the other server has a search engine that can search various relevant information. Subsequently, the program such as an agent receives the search result from the other server.

Subsequently, the server associates the relevant information on the network with the basic information. Only associative information, for example, link information, is stored in the database of the server.

According to an embodiment of the present invention, the relevant information that was searched can be temporarily stored in the database of the server. This is in order to conduct search more effectively and quickly when the same user requests search for the same object.

According to another embodiment of the present invention, it is possible that relevant information is automatically periodically searched based on basic information without command of searching the relevant information from the user terminal device, thereby continually renewing the database of the server. This embodiment can reduce the time that is necessary for completing search of the relevant information after the user terminal device reads the identification symbol of the object.

According to another embodiment wherein a user can recognize an identification symbol of an object only when the user purchases the object, the server of an agency that issues the identification symbol determines whether the identification symbol of the real object that the user purchases is a true identification symbol that was issued by the agency, based on the basic information that the user transmits. If it is determined that the symbol is a true identification symbol, the server further determines whether, before the user transmits the basic information, other user has transmitted the basic information relating to the same identification symbol, thereby preventing the identification symbol of the same object from being transmitted twice or more times.

In this way, it is possible to ensure that the transmitted identification symbol is one that is marked on the true real object that a user purchases and that it is not one that is marked in real object that was purchased before.

(6) Process of Providing Relevant Information Associated with Basic Information of Object to User

The server provides a user with various relevant information that is associated with basic information. That is, the server transmits the relevant information to the user terminal device, and the terminal device shows the user the relevant information that is transmitted from the server in displaying means and so forth.

Fig. 3 is a flowchart of an example of providing relevant information to a user. If the process of providing relevant information

starts (301), the server makes a list of servers where relevant information relating to basic information is searched (302). Subsequently, the basic information is modified so that the search server can use it and, thereafter, the information is transmitted (303). The search server uses the transmitted modified basic information to search relevant information (304). The server provides the user with the searched relevant information just as it is or as it is processed (306).

The relevant information that is provided to the user includes market price information of the object, use opinion of other people, information of auction or reverse auction on the Internet, and so forth.

The user can use the provided relevant information in commodity purchase, auction participation, reverse auction participation, information transmission to a community, e-mail transmission of searched information and so forth.

In a preferred embodiment of the present invention, in the event that the user wishes to conduct a special activity after browsing the relevant information, the request of the user regarding the activity is sent to the sever that provides the relevant information. The relevant server conducts additional processes according to the user's requests. For example, in the event that a user wishes to purchase a commodity by connecting to a shopping mall on the Internet after the user is provided with information about the shopping mall on the Internet of the commodity, this request is directly transmitted to the shopping mall of the Internet through network and, in this way, purchasing is conducted.

Fig. 4 is a flowchart of an example of a process in a case wherein the user who is provided with relevant information according to the present invention requests a service. First, if the user requests an additional service or if the additional service is possible, a button is shown or is provided in the user terminal device, thereby asking the user whether the user wishes to receive the additional service (402). If the user pushes the button to request the additional service (403), the request is transmitted to the server that provided the relevant information, and thereafter, the server that provided the relevant information conducts the service that the user requested (404). Subsequently, the result of the service that is transmitted by the server that provided the relevant information is provided to the user as it is or as it is processed (405).

In other embodiment of the present invention, a user who is provided with relevant information can request the processing of the additional information to the server, based on the relevant information. For example, in the event that the user is provided with relevant information that includes two or more pieces of information, the user may wish to receive information about the shopping mall that can ensure the lowest price among the provided pieces of price information. In this embodiment, the server analyzes the relevant information to provide relevant information about only the shopping mall of the Internet that can ensure the lowest price. If the relevant information is about price information of commodity, dealing information, auction and reverse auction, the user can request optimum purchase of the commodity to the

server. In this embodiment, the server automatically participates in the auction or the reverse auction and analyzes dealing information and price information, thereby conducting optimum purchase.

(7) Process of User Adding or Modifying Basic Information

A user who is provided with relevant information can modify and edit the relevant information. By this process, the basic information of the server can be renewed by the user. In particular, if basic information about the object that the user requests search does not exist or if error exists, this process is effective. Since, if the basic information does not exist or if the error exists, the search of the relevant information is not conducted accurately, it is useful that the user receives this result to renew the basic information.

Fig. 5 is a flowchart of an example of a process wherein the user modifies and edits a part of the relevant information according to the present invention. First, the user terminal device searches basic information by use of the identifying number that is read by the user terminal device (502). It is determined whether basic information exists (503). If the basic information exists, it is determined whether the basic information is accurate (504). If it is determined that the basic information is accurate, relevant information is searched based on the basic information (505). If the basic information is not accurate, the user is asked whether the user changes the basic information (506). If the user does not wish to change the basic information, the relevant information is searched based on the existing basic information (507). If the user wishes to change the

basic information, the process is routed to basic information adding routine that will be described. In step (503) of determining whether the basic information exists, if it is determined that the basic information does not exist, the user is asked whether the user will add basic information (508). If the user does not wish to add the basic information, the search of the relevant information is not completed, and this fact is noticed to user (509). If the user wishes to add the basic information, the user inputs basic information (510). The managing server determines whether the basic information that is inputted by the user is true (511). It is determined whether the basic information that the user inputted is accurate (512). If it is determined that the basic information that the user inputted is accurate, basic information database is renewed based on the inputted information (513). If the basic information that the user inputted is not accurate, the process is terminated.

(8) Process of User Recording Evaluation Information of Object

The user can record, in the server, subjective evaluation information regarding an object. For example, if the object is a commodity, the user can record the grade of the commodity in the server. The evaluation information of the user is recorded together with the basic information about the commodity.

The evaluation information of the user is provided along with the basic information of the commodity to the other people when the other people requests search of relevant information on the commodity. Thus, the user can reference the evaluation information on the commodity that is

provided by various users.

Further, it is possible to record opinion regarding the above evaluation information. In this way, it is possible not only to provide reliability of the evaluation information but also to provide the user's evaluation information on the commodity.

(9) Process of Recording User's Search Result Data

The method of the present invention can include a process of recording the history that a user has read identification symbol of objects. According to the method, identifying number is issued to each user and the server is provided with recording area for recording the history of user reading identifying code of objects. Whenever object identification code information is transmitted from the user terminal device, it is recorded with real time. The history of the user can be used as a reference for searching and processing the relevant information to be provided to the user.

Further, the user may wish to record the relevant information in the server selectively after being provided with the information. In this case, relevant information recording area is provided in the server and only relevant information that the user selects is recorded in the relevant information recording area. In the below, it will be explained for the case that the object the user reads is medium where information is recorded, such as newspaper and magazine. In order to receive relating information relating to articles of the newspaper or the magazine, the user reads identification symbol that is assigned to each article of the

newspaper or the magazine with terminal device. Subsequently, when relevant information is provided to the user from various sources on network by the above-mentioned processes, the user sends a command of recording only selected information among the relevant information to the server. The server records the relevant information that the user selects in the recording medium that is provided in the server. In this way, it is possible for the user to easily make scrap of the articles of newspaper or magazine of the real world in virtual world.

(10) Applied Examples

In the below, examples where basic processes of the present invention are actually applied will be explained.

First, it is explained that relevant information is searched for a general commodity. In this example, identification symbol is printed on the commodity or the surface of the commodity one-dimensionally or two-dimensionally. Basic information may include manufacturing company of the commodity, retail price, standard of the commodity and other basic attributes such as taste, odor, characteristics of the commodity and so forth. The relevant information may include use opinion on the commodity, sale information, auction, reverse auction and so forth that are provided from various servers. In this way, a user who is faced with a commodity in the real world peruses the relevant information on the commodity, thereby receiving information that is necessary for purchasing the commodity from virtual world.

It is explained that relevant information is searched for a media for

providing multimedia contents. In this example, the object where relevant information is searched is a medium where multimedia contents are recorded, such as a video tape, DVD and CD. Identification symbol is printed on the case of the multimedia medium or outer wrap of the medium one-dimensionally or two-dimensionally. Basic information may include copyrighter of the multimedia contents, manufacturing company, genre and other miscellaneous matters. The relevant information may include compressed file, other people's opinion and performance information of the multimedia contents, which can be obtained through network. In this way, the user visits a store that sells a medium where multimedia contents are recorded, such as DVD, reads with terminal device the identification symbol of DVD that the user wants to purchase, and thereafter, receives the multimedia contents that are recorded in the DVD through the network to appreciate it.

It will be explained that relevant information is searched for an article of a newspaper or broadcast program. In this example, identification symbol is recorded in the newspaper with the article. For the broadcast program, the symbol is provided when the program is televised or is recorded in a newspaper that the program is notified beforehand. Basic information is the title of the article of the newspaper and the broadcast program and the basic contents of the article. The relevant information may include related detailed information of the article or program, related articles and so forth. In this way, the user reads the identification symbol of interested article or program while reading a

newspaper or seeing/listening to program, thereby being able to make scrap of the article or program or searching relevant information through network.

According to the embodiment that ensures that the identification symbol that the user transmitted is one that was read from true real object that the user purchased, with reference to the identification symbol that the user transmitted and the basic information relating thereto, it can be determined whether the object the user purchased is a genuine commodity. For example, if the object that the user purchases is jewelry or goods that is necessary to be authenticated, identification symbol should be issued to a genuine object. The agency that issues identification symbol records identification symbols that are issued to genuine object and manages them. The object is determined as being genuine only if the identification symbol that is marked on the object that the user purchases is consistent with one of identification symbols recorded in the database of the agency that issues identification symbol and only if the identification symbol has not been transmitted to the server. The result of determining whether the object is genuine is notified to the user so that the user can recognize whether the commodity that the user purchased is genuine or not.

In the below, the example wherein the network that is shown in Fig. 7 is telephone network having ARS system will be explained. A user calls ARS system through the telephone network, and thereafter, transmits the identification symbol of the real object that the user purchased by voice or dial tone that is generated by pressing electronic button provided in a

transmitting telephone. ARS system that receives the identification symbol from the user transmits the symbol to the agency that issues identification symbol. The agency that issues identification symbol determines whether the identification symbol is the symbol of genuine real object or not and transmits the determination result to ARS system. Subsequently, ARS system notifies the result to the user's receiving telephone with voice. In this way, the user can recognize whether the real object that the user purchased is genuine or not by telephone.

According to another embodiment of the present invention, a person who purchases a real object transmits the identification symbol of the object to identification symbol managing server through network, and records data for example, voice message in recording area referred to by identification symbol of the real object in accordance with the command of the identification symbol managing server. The purchaser of the real object informs the identification symbol to a third party with donating the purchased real object to the third party. The third party who receives the real object and the identification symbol transmits the identification symbol to the identification symbol managing server through network and receives the data recorded in the recording medium referred to by identification symbol for example, voice message that the purchaser of the real object recorded.

3. Method of Creating, Obtaining and Relating Virtual Object From Identification Symbol of an Object

(1) Process of Assigning and Providing Identification Symbol of

Object

Detailed description of this process will be omitted since the process is similar to the process that is described for the method of obtaining relevant information by identification symbol of an object.

However, according to an embodiment of the present invention, the identification symbol of an object can be recognized only after the object is purchased. It is preferred that the identification symbol can be recognized only by destroying a cover or a wrap that covers the identification symbol of the object or by opening the case of the object, after the user purchases the object.

According to another embodiment of the present invention, the identification symbol of an object can be recognized without purchasing the real object. In this example, it is preferred that the identification symbol is marked on the real object so that the symbol is recognized with naked eye or reader.

(2) Process of Relating Identification Symbol of Object and Basic Information of the Object

Detailed description of this process will be omitted since the process is similar to the process that is described for the method of obtaining relevant information by identification symbol of an object.

(3) Process of Reading Identification Symbol by Physically Acting to Object

Detailed description of this process will be omitted since the process is similar to the process that is described for the method of

obtaining relevant information by identification symbol of an object.

(4) Process of Searching Basic Information of Object Referencing Identification Symbol

Detailed description of this process will be omitted since the process is similar to the process that is described for the method of obtaining relevant information by identification symbol of an object.

In an embodiment of the present invention, only one user who purchases an object can obtain virtual object. In this example, the information of the identification symbol that a user transmits is authenticated.

As an authenticating process, there can be a process wherein it is determined whether the identification symbol that the user transmits is the same as the identification symbol that is marked on the real object that was sold actually. According to this process, it is prohibited that even though the user inputs identification symbol incorrectly a virtual object is obtained and that even though the user inputs identification symbol of the object that the user did not purchase the virtual object is obtained.

As another authenticating process, there can be a process wherein it is determined whether the identification symbol that a user transmits is the same as the identification symbol that was transmitted by other user or the same user and that was used for obtaining virtual object. In this way, it is prohibited that the user obtains virtual object once more for the real object that was purchased.

(5) Process of Creating and Obtaining Virtual Object Based on Basic

Information

The server creates a virtual object corresponding to the basic information based on the basic information or obtains the virtual object that is created. The server can newly create a virtual object based on the basic information or can obtain the virtual object that has been created by means of the basic information.

First, an embodiment of newly creating a virtual object will be described.

Server (709) can create a virtual object. Alternatively, the server requests virtual object managing server (711) that is provided separately to create the virtual object. The managing sever creates the virtual object and thereafter, transfers it to sever (709). In order to create virtual object, data for expressing virtual object is generated with reference to the basic information that is searched through identification information of the real object. In this specification, the data for expressing the virtual object is referred to as virtual object defining data. It is preferred that virtual object definition data includes basic information that is necessary for creating the virtual object. For example, if the real object is a garment, the virtual object definition data may include information about manufacturing company of the garment, garment name and so forth.

It is also possible that relevant information about the real object is searched through network with reference to the basic information and that the virtual object definition data is generated based on the basic information and the relevant information. For example, if the real object

is a garment, if the basic information includes manufacturing company of the garment and the garment name and if the relevant information includes the color and the size of the garment and manufacturing year of the garment, it is possible to create the virtual object so as to have similar shape and characteristic of the real object with reference to the relevant information.

The generated virtual object definition data is recorded in virtual object database (713) of virtual object managing server (711). The virtual object is expressed so as to be shown on a computer monitor that is accessible on network. Virtual object definition data can include information for expressing the virtual object, for example, information about shapes that can be shown in a monitor. The information about the shape of the virtual object, which is included in the information about the virtual object, may be graphic data for expressing the character of the virtual object on a computer monitor.

In the below, an embodiment wherein virtual object that has been created is obtained through basic information will be explained.

Computer or server (709) that wishes to obtain virtual object transmits the basic information about the virtual object to virtual object managing server (711) and requests the server to transfer the virtual object. Virtual object managing server (711) references the basic information and searches information about the virtual object corresponding to the basic information from database (713). The information about the virtual object, which is recorded in virtual object database (713), is transmitted to

computer or server (709) that wishes to obtain the virtual objects.

(6) Process of Managing Virtual Object in Virtual Space

Server (709) manages virtual object that is recorded in user database (705). The user can connect server (709) and request the server to manage virtual object.

(7) Applied Example

In the below, practical example where the basic processes of the present invention are applied will be explained with reference to Fig. 7.

In a first example, a garment or an accessory for decorating a character-avatar in chatting service is obtained as virtual object. Real object (701) is a real garment or a real accessory. Company of the garment or the accessory prints identification symbol (703) on the garment or the accessory or attaches the symbol as a form of tag so that the symbol is not exposed when producing and selling the garment or the accessory. Unique identification symbol (703) is assigned to each garment and accessory. The user who purchases the garment or accessory recognizes identification symbol (703) and thereafter, reads the symbol, thereby inputting it to computer (707) or directly inputs letters corresponding to the identification symbol. The identification symbol that is inputted to computer (707) is transmitted to chatting server (709) through network. At this time, computer (707) also transmits the user's chatting server login ID to server (709). After checking the user's ID, chatting server (709) creates a virtual object or obtains it from virtual object server (711) with reference to the basic information corresponding to the transmitted

identification symbol. The information about the obtained virtual object is recorded user database (715) that is associated with the user's account. When the user uses the chatting service afterwards, the computer expresses the user who wears the virtual garment or accessory based on the information about the virtual object that is recorded in the database which is associated with the user's account. It is preferred that the virtual garment or accessory which is expressed when the user uses chatting service has a similar shape to the real garment or the real accessory that the user actually purchased.

An example where item which game character can wear is obtained as virtual object in online game service will be explained. Online game company or other company relating thereto sells, in real store, models having similar configuration or shape to the item that appears in the game which is provided by the online game company. For example, if the item that appears in the online game is a knife, model knife having the similar configuration or shape to the item is sold in the real store. In the real store, identification symbol (703) is printed on the model or is attached to the model as a form of a sealed tag so that the symbol cannot be exposed. The user purchases a model knife and recognizes identification symbol (703), and thereafter inputs the symbol to computer (707) by reading it with barcode reader (705) or directly inputs letters corresponding to the identification symbol. The identification symbol that is inputted to computer (707) is transmitted to online game server (709) through network. At this time, computer (707) also transmits the user's login ID to server

(709). After checking the user's ID, online game server (709) creates an item with reference to the basic information corresponding to the transmitted identification symbol or obtains the item from item managing server (711). The information about the obtained item is recorded in user database (715) that is associated with the user's account. Afterwards, when using the online game service, the user is expressed in computer as a form of having the item that is expressed based on the information about item that is recorded in database that is associated with its account. It is preferred that the item that is expressed in the online game service has a similar shape to the model that the user actually purchased.

The concept of the present invention can be applied to a service that integratedly manages virtual objects that are created in virtual space. For example, with respect to the above-mentioned online chatting service and online game service, the virtual objects that are associated with the real objects that are inputted through two processes can be managed in respective virtual space that each character exists.

For example, a user makes virtual room where characters gather while using chatting service. This room is a virtual room that a user who opens a chatting room for the first time owns. The user decorates the room with accordance with its taste when the user connects with the chatting service in ordinary times. When the user transmits the codes of the objects that exist in the room to the server, the server searches what the objects are and makes it possible to display the virtual objects having the shape of the objects in the room.

In the embodiment wherein an identification symbol can be recognized without purchasing a real object, a user recognizes the identification symbol without purchasing the real object. Based on the recognized identification symbol, a virtual object corresponding to the real object is created or obtained in virtual space. According to the embodiment, a user tries to approach to real objects in order to recognize the identification symbol and obtain virtual objects. Thus, it is possible that the real object is advertised to many users. Further, it is also possible that the manufacturing company or name of the real object where the identification symbol the user recognized is marked is expressed when the obtained virtual object is expressed in the user terminal. For example, if this embodiment is applied to online game, a user recognizes identification symbol by approaching to a real object in order to obtain an item corresponding to the real object. The item that is created through the identification symbol that the user recognized is expressed in a terminal together with the manufacturing company or name of the object whose identification symbol was recognized by the user. Therefore, the manufacturing company of the real object can have advantage of commodity advertisement through online game.

【INDUSTRIAL APPLICABILITY】

According to the present invention, it is possible that a user who is faced with an object that exists in the real world can receive information about the object in various virtual spaces without delay.

Further, in the event that the object is a commodity, price

information and sale information regarding the commodity are searched and are provided to the user, thereby helping the user purchase the commodity. Thus, it is possible that the user purchases the commodity with optimum condition with reference to the lowest price of the commodity real-timely. In addition, link information of the Internet shopping mall that sells the commodity is provided along with the price information of the commodity so that the user can purchase the commodity online real-timely.

【CLAIMS】

1. A method for searching relevant information relating to an object including physically readable identification symbol through network and providing the relevant information, said method comprising,

a step of associating the identification symbol of the object with basic information of the object;

a step of searching the relevant information relating to the object based on the basic information;

a step of associating the searched relevant information of the object with the basic information of the object;

a step of reading the identification symbol by physically acting to the object with user terminal device;

a step of searching the basic information of the object with reference to the read identification symbol; and

a step of providing, to the user, the relevant information that is associated with the basic information with reference to the basic information of the object.

2. The method according to Claim 1, wherein the identification symbol includes user identification symbol that is assigned to each user.

3. The method according to Claim 1, wherein the basic information of the object is recorded in database of server connected to the network; wherein the step of searching the basic information of the object

comprises a step of the user terminal device transmitting the identification symbol to the server through the network and a step of the server referencing the database, thereby searching basic information that is associated with the transmitted identification symbol.

4. The method according to Claim 1, wherein the basic information of the object is recorded in recording area of the user terminal device and wherein the step of searching the basic information of the object is a step of the user terminal device referencing the recording area, thereby searching the basic information that is associated with the read identification symbol.

5. The method according to Claim 1, wherein the identification symbol is printed on surface of the object or case of the object in a form that can be read by barcode scanner; wherein the user terminal device includes barcode scanner; and wherein the step of reading identification symbol includes a step of the barcode scanner reading the identification symbol that is printed on the surface of the object or the case of the object.

6. The method according to Claim 1, wherein the step of searching the relevant information through network further comprises a step of modifying the basic information so that the basic information can be used for searching the relevant information through the network, a step of providing the modified basic information to a search engine for

searching various information on the network, and a step of receiving search result of the search engine.

7. The method according to Claim 1, further comprising a step of receiving notice of whether the basic information is changed from the user and a step of changing the basic information by the user's request if the user requests to change the basic information, after the step of providing the relevant information to the user.

8. The method according to Claim 1, further comprising a step of receiving notice of whether evaluation information of the object is added from the user and a step of receiving the evaluation information from the user and recording the evaluation information if the user requests to add the evaluation information, wherein the step of providing the relevant information further comprises a step of providing the evaluation information of the object.

9. The method according to Claim 1, further comprising a step of receiving notice of whether the relevant information is selected from the user and a step of recording the relevant information if the user selects the relevant information.

10. A system for searching relevant information relating to an object including physically readable identification symbol through network

and providing the relevant information to a user, said system comprising

a host computer comprising a first recording area where the identification symbol, basic information and associative relationship between the identification symbol of the object and the basic information of the object are recorded, searching means for searching relevant information relating to the object based on the basic information of the object through network, a second recording area where the searched relevant information of the object and the associative relationship between the basic information of the object and the relevant information of the object are recorded; and

a user terminal device comprising reading means for reading the identification symbol by physically acting to the object, temporary storing means for temporarily storing the read identification symbol, transmitting means for the temporarily stored identification symbol to the host computer through network, receiving means for receiving the relevant information that is transmitted from the host computer and means for providing the received relevant information by the receiving means to the user

wherein the host computer further comprises receiving means for receiving the identification symbol transmitted from the user terminal device and transmitting means for transmitting the relevant information that is recorded in the second recording area to the user terminal device; and

wherein the host computer extracts basic information of the object with reference to the identification symbol received by the receiving means, searches through the network the relevant information that is associated with the basic information with reference to the extracted basic information of the object and records it in the second recording area.

11. A method for creating virtual object corresponding to an object including physically readable identification symbol in virtual space that is defined by user terminal device, server and network to which the terminal device and the server are accessible, said method comprising,

a step of associating the identification symbol of the object with basic information of the object;

a step of reading the identification symbol by physically acting to the object through the user terminal device;

a step of searching the basic information of the object with reference to the read identification symbol; and

a step of creating the virtual object corresponding to the object with reference to the basic information of the object.

12. A method of creating virtual object corresponding to an object including physically readable identification symbol in virtual space that is defined by user terminal device, server including database where virtual object defining data for defining the virtual object is recorded and network to which the terminal device and the server are accessible, said method

comprising,

a step of associating the identification symbol of the object with basic information of the object;

a step of reading the identification symbol by physically acting to the object through the user terminal device;

a step of searching the basic information of the object with reference to the read identification symbol;

a step of transmitting the basic information to the server; and

a step of receiving the virtual object defining data that the server transmits with reference to the basic information.

13. The method according to Claim 11 or 12, wherein the basic information of the object is recorded in database of the server that is connected to the network and wherein the step of searching the basic information of the object comprises a step of the user terminal device transmitting the identification symbol to the server through the network and a step of searching the basic information associated with the transmitted identification symbol with reference to the database.

14. The method according to Claim 11 or 12, wherein the basic information of the object is recorded in recording area of the user terminal device and wherein the step of searching the basic information of the object is a step of the user terminal device searching the basic information that is associated with the read identification symbol with reference to the

recording area.

15. The method according to Claim 11 or 12, wherein the identification symbol is printed on surface of the object or case of the object in a form that can be readable by barcode scanner; wherein the user terminal device includes a barcode scanner; and wherein the step of reading the identification symbol comprises a step of the barcode scanner reading the identification symbol that is printed on the surface of the object or the case of the object.

16. The method according to Claim 11 or 12, wherein the identification symbol is printed on the surface of the object or the case of the object so as to be readable only after the case is opened or the case covering the identification symbol is destroyed; wherein the identification symbol is uniquely assigned to each object and the server includes database for recording identification symbol assigned to the object; and wherein the step of creating virtual object is a step of determining whether the identification symbol corresponding to the transmitted basic information is recorded in the database and thereafter, creating the virtual object only if the symbol is recorded in the database.

17. The method according to Claim 11, wherein the step of creating virtual object further comprises a step of generating virtual object defining data for creating the virtual object in virtual space on the network based on

the basic information and a step of recording the generated data in the database of the server that is connected to the network.

18. The method according to Claim 11, further comprising a step of searching relevant information relating to the object through the network with reference to the searched basic information, wherein the step of creating virtual object is a step of creating the virtual object with reference to the basic information and the relevant information.

19. The method according to Claim 17, wherein the step of creating virtual object further comprises a step of generating virtual object defining data for creating the virtual object in virtual space on the network based on the basic information and the relevant information and a step of recording the generated data in the database of the server that is connected to the network.

20. The method according to Claim 11 or 12, wherein the virtual object is virtual item that avatar-character of online chatting service can own.

21. The method according to Claim 11 or 12, wherein the virtual object is virtual item that character of online game service can own.

22. A system for searching relevant information relating to an object including physically readable identification symbol through network

and providing the relevant information to user, said system comprising

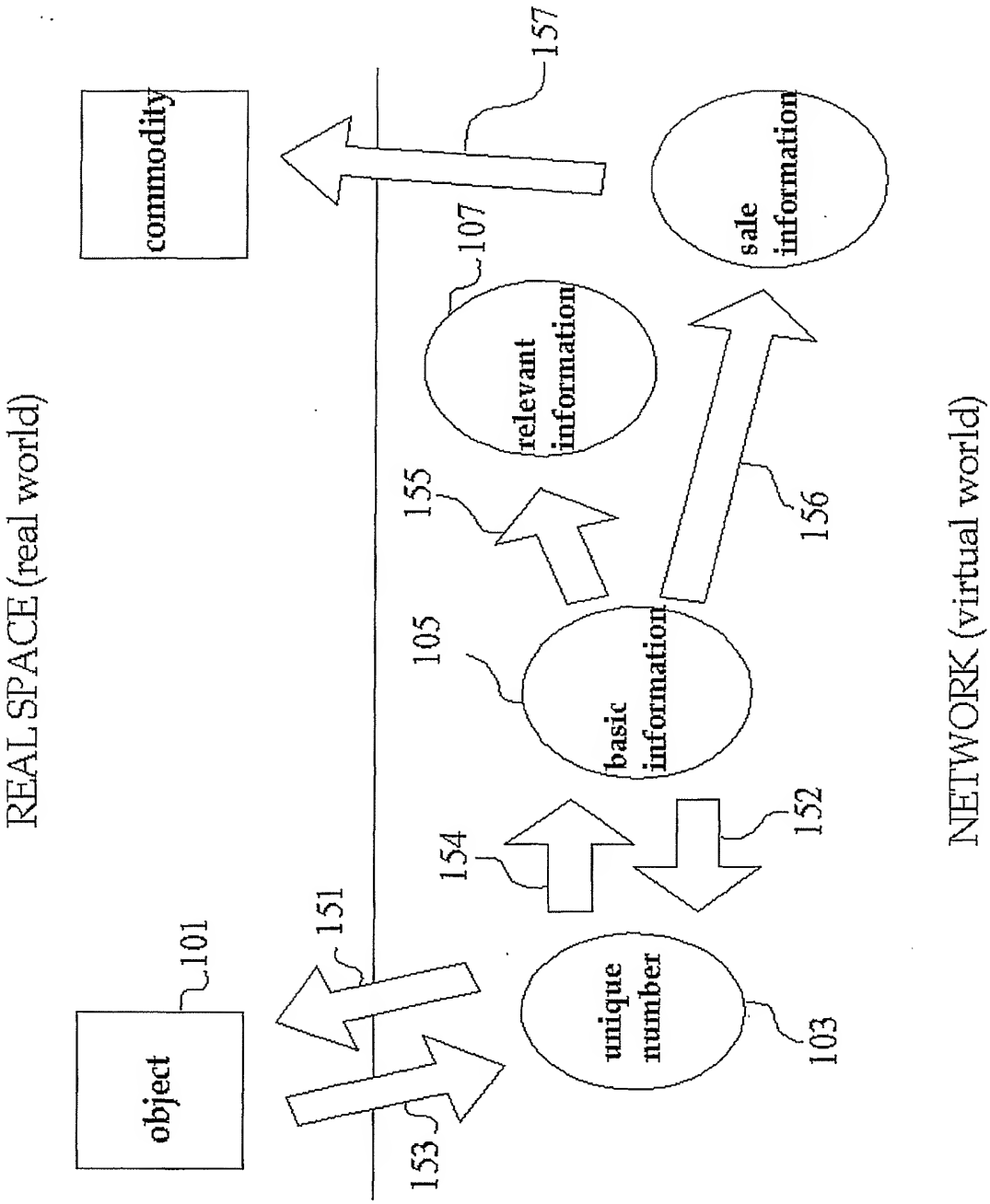
a host computer comprising a first recording area where the identification symbol, basic information and associative relationship between the identification symbol of the object and the basic information of the object are recorded, means for creating virtual object corresponding to the object based on the basic information of the object, a second recording area where virtual object defining data for defining the created virtual object is recorded;

a user terminal device comprising reading means for reading the identification symbol by physically acting to the object, temporary storing means for temporarily storing the read identification symbol, transmitting means for transmitting the temporarily stored identification symbol to the host computer through network;

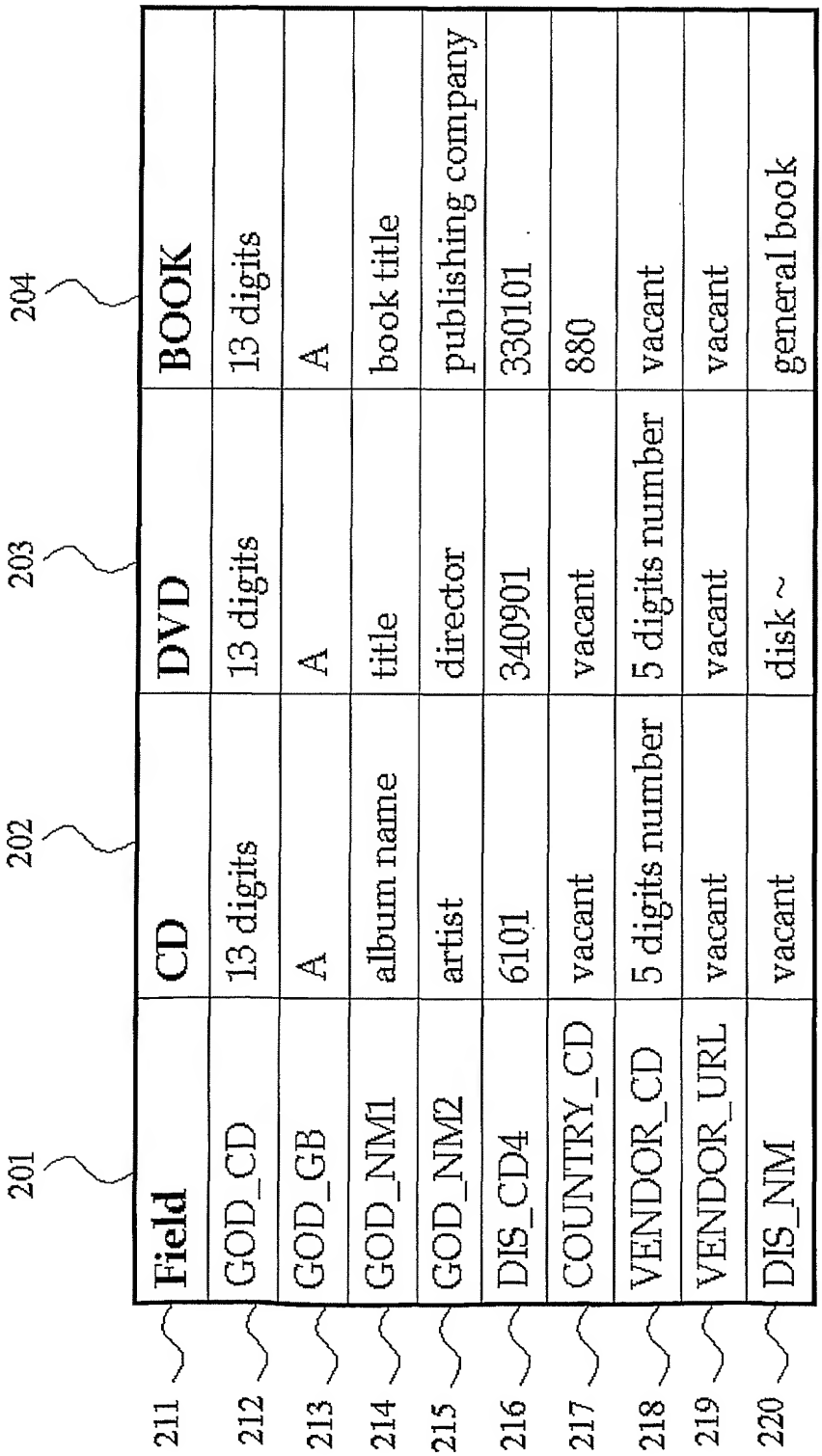
wherein the host computer further comprises receiving means for receiving the identification symbol transmitted from the user terminal device; and

wherein the host computer extracts basic information of the object with reference to the identification symbol received by the receiving means and generates virtual object defining data for defining the virtual object with reference to the extracted basic information of the object.

【Fig. 1】

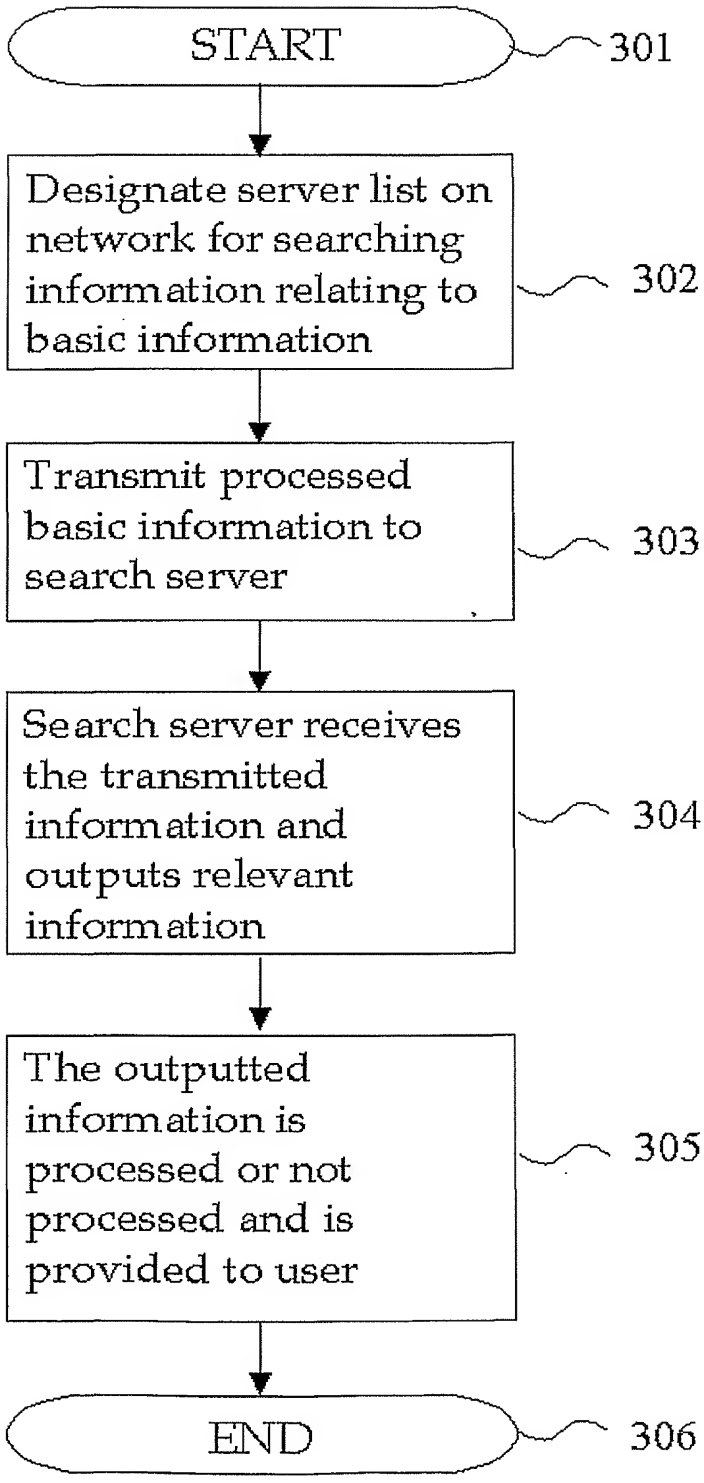

REAL SPACE (real world)
NETWORK (virtual world)
commodity
object
101
151
153
157
107
155
156
154
152
105
103
relevant information
basic information
unique number
sale information

【Fig. 2】

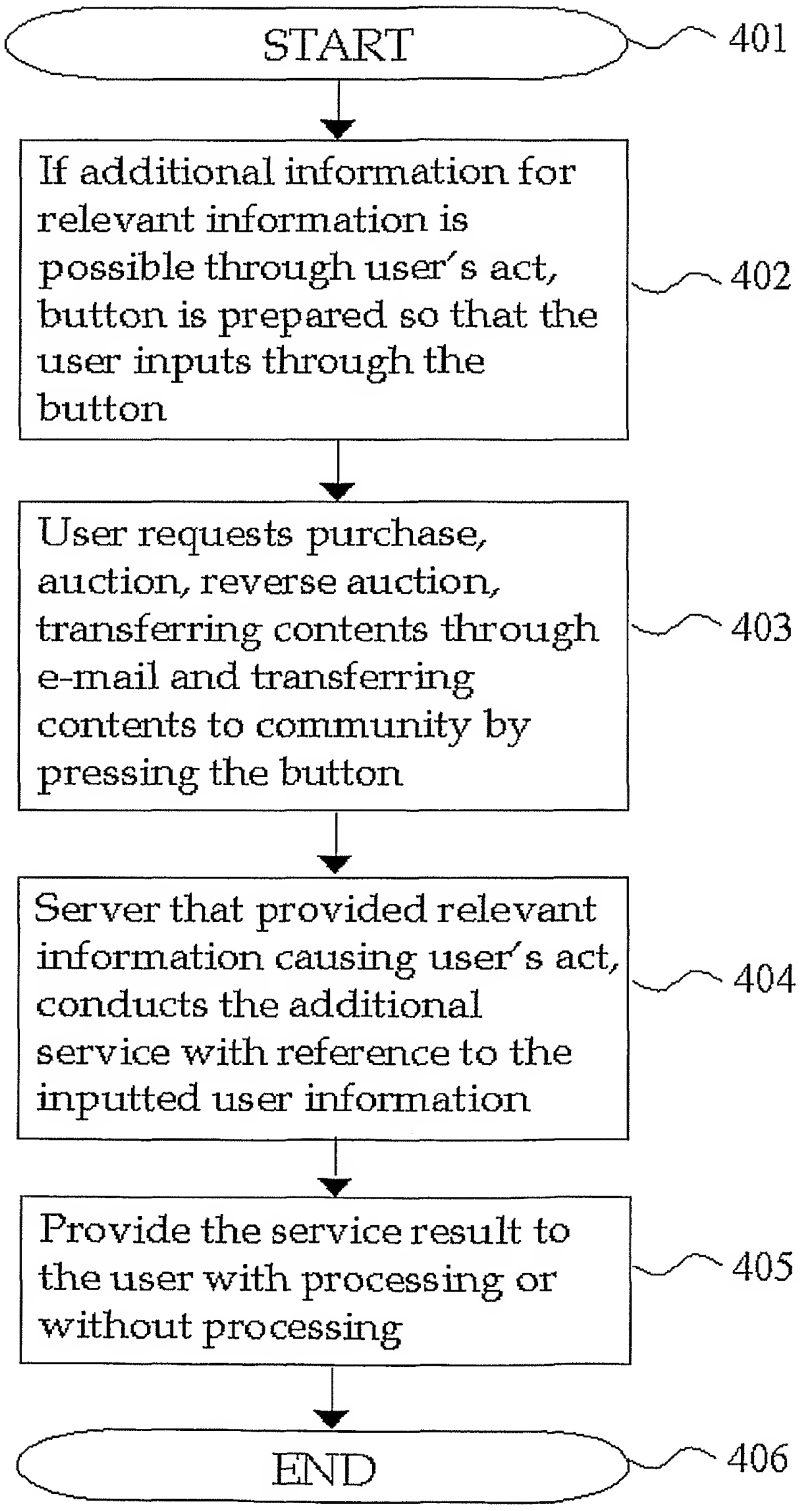


	201	202	203	204
211	**Field**	**CD**	**DVD**	**BOOK**
212	GOD_CD	13 digits	13 digits	13 digits
213	GOD_GB	A	A	A
214	GOD_NM1	album name	title	book title
215	GOD_NM2	artist	director	publishing company
216	DIS_CD4	6101	340901	330101
217	COUNTRY_CD	vacant	vacant	880
218	VENDOR_CD	5 digits number	5 digits number	vacant
219	VENDOR_URL	vacant	vacant	vacant
220	DIS_NM	vacant	disk ~	general book

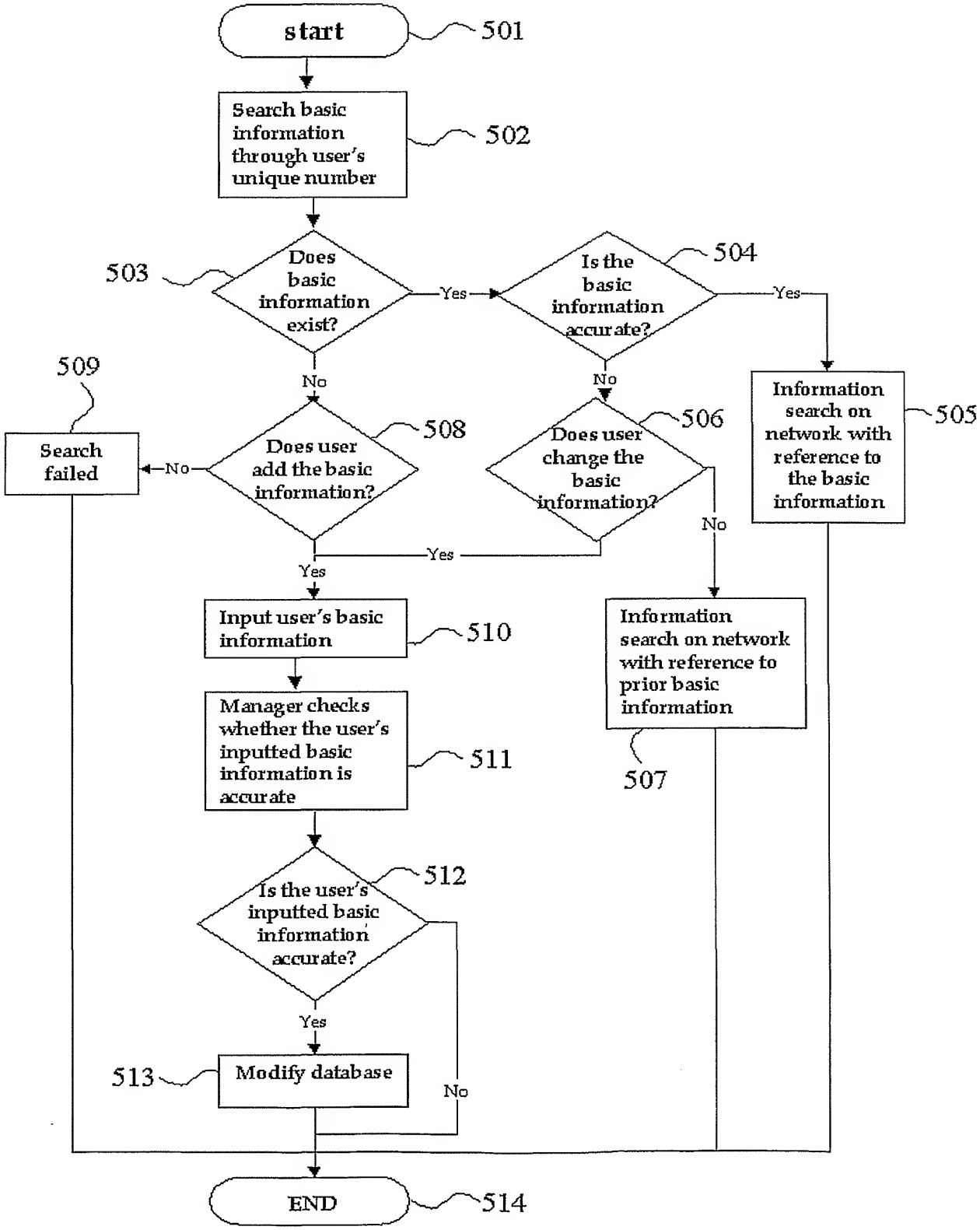
【Fig. 3】


START
301
Designate server list on network for searching information relating to basic information
302
Transmit processed basic information to search server
303
Search server receives the transmitted information and outputs relevant information
304
The outputted information is processed or not processed and is provided to user
305
END
306

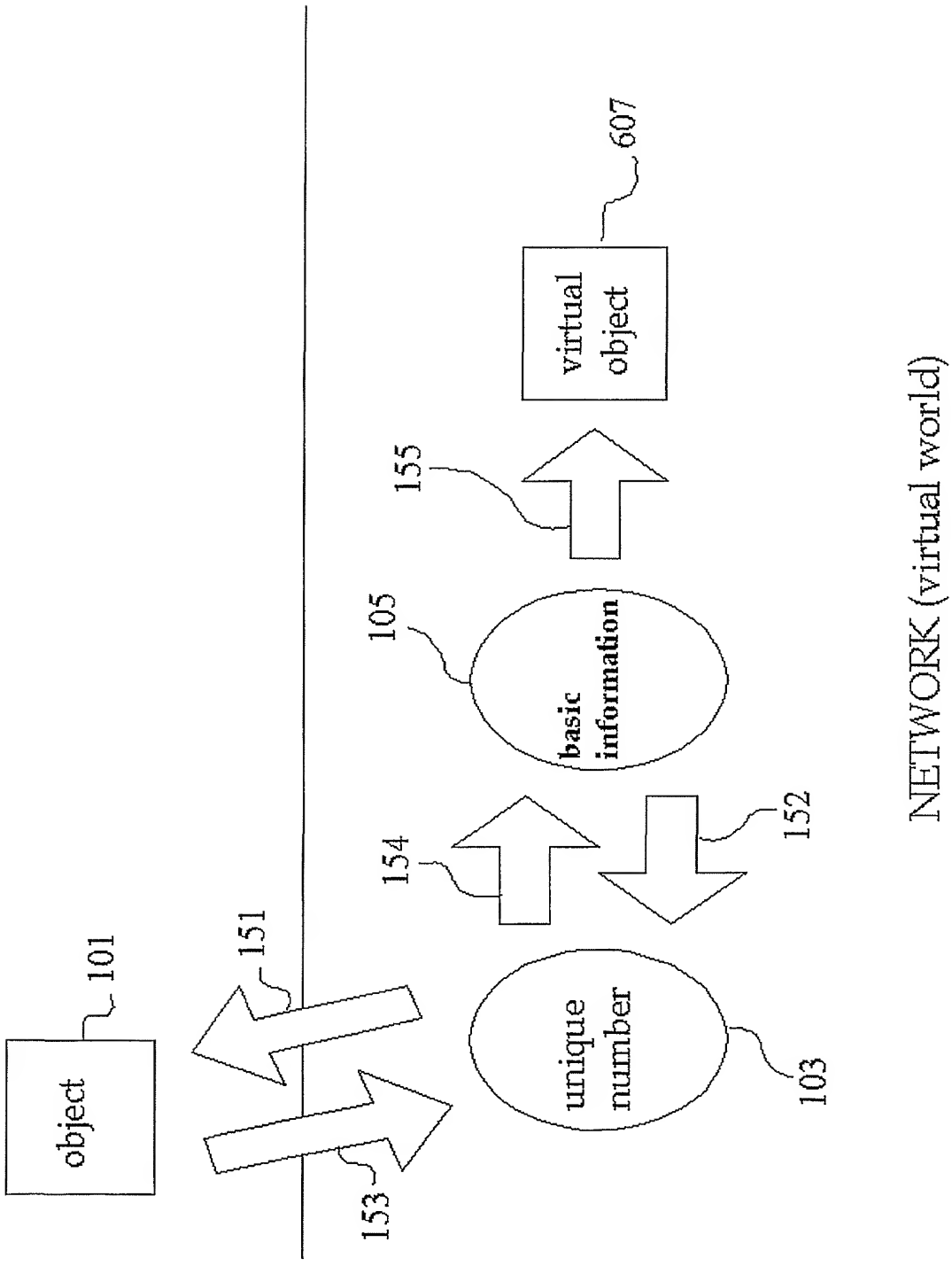
【Fig. 4】


START
401
If additional information for relevant information is possible through user's act, button is prepared so that the user inputs through the button
402
User requests purchase, auction, reverse auction, transferring contents through e-mail and transferring contents to community by pressing the button
403
Server that provided relevant information causing user's act, conducts the additional service with reference to the inputted user information
404
Provide the service result to the user with processing or without processing
405
END
406

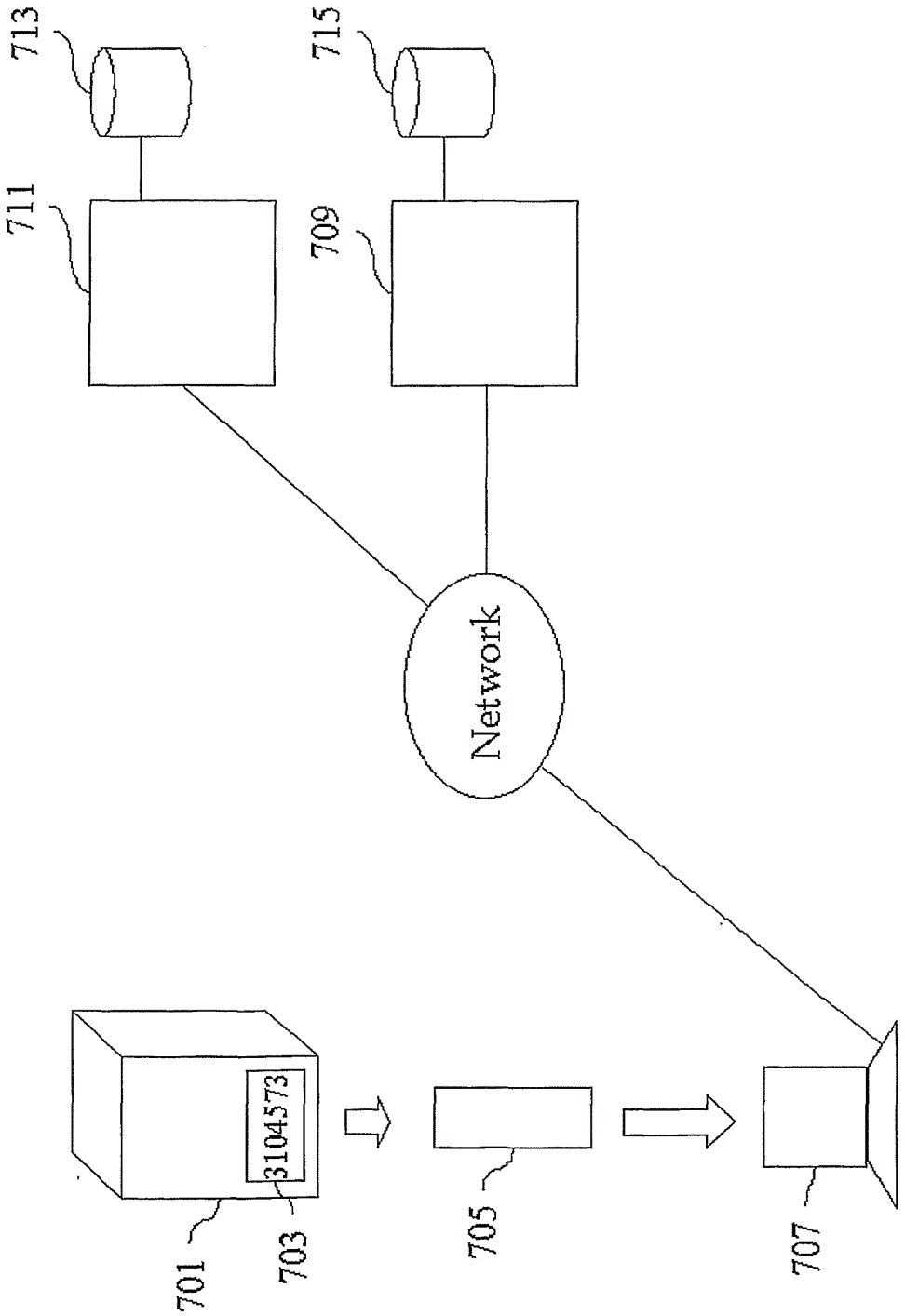
【Fig. 5】


start
501
Search basic information through user's unique number
502
Does basic information exist?
503
Yes
Is the basic information accurate?
504
Yes
Information search on network with reference to the basic information
505
No
Does user change the basic information?
506
No
Information search on network with reference to prior basic information
507
Yes
No
Does user add the basic information?
508
No
Search failed
509
Yes
Input user's basic information
510
Manager checks whether the user's inputted basic information is accurate
511
Is the user's inputted basic information accurate?
512
Yes
No
Modify database
513
END
514

【Fig. 6】


REAL SPACE (real world)
NETWORK (virtual world)
object
101
151
153
unique number
103
154
152
basic information
105
155
virtual object
607

【Fig. 7】



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR01/01010

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 G06F 17/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimun documentation searched (classification system followed by classification symbols)
IPC7 G06F17/00, 17/60, 19/00

Documentation searched other than minimun documentation to the extent that such documents are included in the fileds searched
KR; IPC as above

Electronic data base consulted during the intertnational search (name of data base and, where practicable, search trerms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR10-1999-78826 A (KIM HEYSUK) NOV. 05. 1999 see the whole document	1-9
A	KR10-2000-24613 A (KIM NAMGON) MAY. 06. 2000 see the whole document	1-9
P,A	KR10-2000-48434 A (HITACHI CORP.) JULY. 25. 2000 see the whole document	1-22
P,A	KR10-2000-52582 A (HITACHI CORP.) AUGUST. 25. 2000 see the whole document	1-22

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:
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"E" earlier application or patent but published on or after the international filing date
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"X" document of particular relevence; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
10 SEPTEMBER 2001 (10.09.2001)	11 SEPTEMBER 2001 (11.09.2001)

Name and mailing address of the ISA/KR	Authorized officer
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